METHOD AND SYSTEM FOR PROVIDING A SERVICE IN A PHOTOREALISTIC, 3-D ENVIRONMENT

FIELD OF THE INVENTION

[0001] The present invention relates to a method and system for providing a service in a photorealistic 3-D environment.

BACKGROUND INFORMATION

[0002] The development of 3-D graphics and virtual reality modeling has led to dramatic improvements in computer-generated environments. From Ivan Sutherland's pioneering adaptation in 1966 of the Remote Reality vision systems of the Bell Helicopter project, virtual environments have evolved from a single wireframe room to the elaborate virtual environments being developed today. These virtual environments may encompass the gamut from a 3-D virtual reality ("VR") world where a user's physical movements in the real world are translated into actions in the VR world to 3-D virtual environments digitally presented to a user where more traditional computer navigational and interaction commands are used to generate action in the virtual environment. Regardless of the degree of user immersion, visual environments generally may provide for greater data presentation and absorption as is highlighted in a common expression "a picture is worth a thousand words." Despite these advantages, comprehensive services available in these 3-D virtual environments, including visual browsers for a real-life entity (hereinafter used to refer to an actual place and/or actual entity), do not currently exist.

[0003] The concept of virtual environments is conventionally known and has been addressed by both engineers and writers. Neil Stephenson, a leading writer in this genre, describes in his novel Snow Crash a further evolution of the World Wide Web ("Web") termed the Metaverse. In Stephenson's book, the Metaverse is a virtual environment where users may interact personally and/or commercially with other users. Users are represented in the Metaverse by individual avatars, which are human-like representations of them. Though Snow Crash discusses virtual real estate, the Metaverse is not a representation of a real-life entity (i.e., an actual place and/or actual entity). Stephenson's Metaverse does not describe the photorealistic, 3-D services for real-life entities that are lacking today.

[0004] Along similar lines as the Metaverse, companies such as www.activeworlds.com and www.blaxxun.com offer virtual worlds where users may visit virtual locations such as virtual malls. These multi-user virtual worlds, like the Metaverse, are not representations of real-life entities (i.e., actual places and/or actual entities). Additionally, the locations of entities and places within these virtual worlds do not correspond to an actual physical context (i.e., positioning in relationship with other entities and places) in which the entity or place is located. For example, these virtual malls do not represent actual malls nor are they located in an environment modeled after an actual city or town-both important aspects in representing a real-life entity. Additionally, these virtual worlds are generally not photorealistic presentations and may appear cartoon-like in their visual display. Like the Metaverse, these virtual worlds do not provide sophisticated photorealistic 3-D services for real-life entities.

[0005] In an urban planning context, 3-D models of actual locations are known and are relatively common. However, these urban planning 3-D models are not designed in a manner to provide mapping service to a user, visual browsing service, educational, or entertainment services nor do they provide for commercial advertising and immersive e-commerce. Additionally, urban planning 3-D models are often not photorealistic in presentation. For these reasons, urban planning 3-D models do not satisfy the need for sophisticated photorealistic, 3-D services for actual places and/or actual locations.

[0006] Even though photorealistic, 3-D services for actual places and/or actual entities do not currently exist, numerous less sophisticated services do. MapQuest® and other 2-D mapping services provide neither photorealistic displays nor 3-D models and therefore do not allow a user to experience a representation of an actual place. Additionally, 2-D mapping services do not incorporate embedded advertising or immersive e-commerce in their 2-D displays. Other terrain and aerial mapping services are also limited. These aerial mapping services, such as www.getmapping.com and www.geosoftware.com, do not provide street level views nor do they allow users to plan and witness virtual trips. Navigation between locations in the mapped environment does not occur other than by scrolling through the maps. These existing mapping services do not provide photorealistic 3-D models of actual places and do not provide enhanced mapping services such as virtual trips.

[0007] Existing 3-D services for actual entities are similarly limited. Actual entities may consist of organisms such as a human body or animal or part of the same. Conventional services for these organisms include the actual scanning and viewing of the organism using medical and/or research devices. These systems are limited in their ability to record, present, and allow manipulation of the environment. For example, conventional system do not allow the virtual navigation of a human coronary system, pulmonary system, or nervous system. In fact, these system provided limited views and do not provide enhanced services such as embedded and immersive e-commerce and educational services to teach in a 3-D, photorealistic environment.

[0008] Additionally, what many people consider 3-D virtual environments are really linked panoramas (e.g., linked 2-D panoramas) that simulate a 3-D virtual environment. In these panoramas, users can not freely move throughout the environment due to the two-dimensional nature of the environment even though the images may appear 3-D. For example, images created using iPIX® and QuickTime VR® are examples of these types of panoramas. In reality, what often appears as a 3-D environment is a 2-D image or panorama with 3-D appearance.

[0009] Web-based and stand-alone 3-D games may provide photorealistic, 3-D environments, however, these photorealistic, 3-D environments do not represent actual places and/or actual entities nor do they provide sophisticated services. In fact, conventionally known games typical provide a limited, scripted interaction with the environment. Additionally, 3-D games do not contain embedded advertising and immersive e-commerce.

[0010] Conventional 3-D environments and their associated services do not fill a current need for photorealistic, 3-D virtual environments representing actual places and/or